How to design high-quality domain-specific languages?

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Discussed topics

• What is a language?
  • [A] Semantics + Syntax (Abstract and Concrete)
  • Tools, Workbench?

• Criteria for high-quality languages
Properties

• Gokhan’s 20 characteristics a DSL must have.
• Quantifiable
  • Non-ambiguous. But in some domains, ambiguity is needed.
• Non-quantifiable
  • Maintainability
  • Evolvability
  • Usability
    • How to asses usability of a language? Asking people?
What is a high-quality language?

• Several possible answers:
  • A language whose concrete syntax is developed by domain specialists.
  • A language that respects a given set of properties.
  • A language that constrains user expression (for security).
  • A declarative language, strongly typed, with no side-effects.
  • A high-quality language is a set of languages describing different aspects of a system/domain
  • A language that is formally defined.
  • A language that drives (programmers) to produce high-quality programs.
Alternative answer

• A possible answer could be the way the language was designed:
  • Several iterations.
  • Collaboration of all stakeholders.
About the concrete syntax

• Tooling support for checking concrete syntax
• Graphical or textual?